

TEXAS DEPARTMENT OF HEALTH AUSTIN, TEXAS INTER-OFFICE MEMORANDUM

TO: Regional Directors

Directors, Local Health Departments

Directors, Independent WIC Local Agencies

Herman Horn, Chief, Bureau of Regional/Local Health Operations

FROM: Barbara Keir, Director

Public Health Nutrition and Education

Bureau of Nutrition Services

DATE: October 6, 2000

SUBJECT: Nutrition Risk Criteria Changes

Implementation of Revised Participant and Diet/Health History Forms

Changes to the Scoring Protocol for Fruits and Vegetables and Serving Sizes

1. The State Agency recently received revised/updated risk criteria from USDA. Attached you will find revised copies of the risk conditions affected, as well as a new table of contents, to insert in your copy of the Texas Nutrition Risk Manual. This revision includes:

- A new risk code #426, Inadequate Folic Acid Intake to Prevent Neural Tube Defects (NTD's), Spina Bifida and Anencephaly, for breastfeeding and non-breastfeeding women only.
- Several modifications to existing criteria, specifically:
 - Risk code #201, formerly Anemia, has been renamed Low Hematocrit/Low Hemoglobin; the justification and clarification for this risk code has been revised for consistency.
 - Risk code #362, Developmental, Sensory or Motor Disabilities Interfering with the Ability to Eat, has been revised to include "feeding problems due to a developmental disability such as pervasive development disorder (PDD) which includes autism."
 - Risk code #414, No Dependable Source of Iron for Infants at 6 Months of Age or Later, now defines iron-fortified infant formula as 10 mg of iron per liter at standard dilution.

Please remove from your manual the table of contents and the pages for risk codes 201, 362, 414, and replace with the enclosed revised (9/00) copies, including the new risk code 426. You will need to make additional copies to distribute to all CPAs and WCSs in order for them to replace these pages in their manuals.

2. This is also a reminder that November 1, 2000 is the implementation date for the revised participant and diet/health history forms. A summary of revisions to the forms is attached. The following forms have been revised: Child Participant Form (WIC-38), Breastfeeding Participant Form (WIC-40), Postpartum Participant Form (WIC-41), Diet/Health History for Children (WIC-44 & 44a) and Diet/Health History for Women (WIC-45 & 45a). It is important that you destroy the corresponding old versions of these forms once implementation begins on November 1, 2000.

The distribution of these forms is scheduled to begin October 9, 2000. **Please do not use them until November 1, 2000.** Attached are camera ready copies to use in case you do not receive your shipment in time to implement by November 1, 2000.

Minor changes were also made to the pregnant participant form and the infant participant and diet/health history forms. However the changes were not major enough to require inclusion of these forms in this mass distribution. You may continue to use them until your stock is depleted. Once the current warehouse supply is depleted, we will stock the revised versions. The new versions will also have a revision date of 11/1/2000.

3. The Food Guide Pyramid on the diet recall form and the scoring protocol for fruits and vegetables have changed. Attached is a detail of the changes to the Food Guide Pyramid, fruit and vegetable scoring changes, and assigning WIC deficiencies when evaluating diet.

A revised version of the Serving Sizes Reference Guide is also attached. Please replace the older version with the revised version dated 11/1/2000. This is a corrected version and includes additional foods.

If you have any questions or need further information, contact Isabel Clark, Clinical Nutritional Specialist at Isabel.Clark@tdh.state.tx.us or 512-458-7111, ext. 3489. If you do not receive your distribution of forms by October 23, contact Paula Kanter, Clinical Nutrition Specialist, at 512-458-7111, ext. 3528.

Attachments:

Revised index and risk criteria (12 pages)

Summary of revisions to participant and diet/health history forms (1 page)

Revised camera ready forms (7 pages)

Changes to the Scoring Protocol for fruits and vegetables (2 pages)

Serving Sizes Reference Guide (2 pages)

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^{*} Clarifications/Guidelines section added

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^{*} Clarifications/Guidelines section added

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| | revised 9/00 |

^{*} Clarifications/Guidelines section added

Low Hematocrit/Low Hemoglobin

Definition/cut-off value

Hemoglobin or hematocrit concentration below the 95 percent confidence interval (i.e., below the .025 percentile) for healthy, well-nourished individuals of the same age, sex, and stage of pregnancy.

The Texas State Agency has elected to adopt hematological values with no adjustments for smoking and/or altitude based on the 1998 CDC Guidelines. See Clarifications/Guidelines section.

Participant category and priority level

| Category | Priority |
|-------------------------|----------|
| Pregnant Women | I |
| Breastfeeding Women | I |
| Non-Breastfeeding Women | III |
| Children | III |
| Infants | I |

Justification

Hemoglobin (Hb) and hematocrit (Hct) are the most commonly used tests to screen for iron deficiency anemia. Measurements of Hb and Hct reflect the amount of functional iron in the body. Changes in Hb concentration and Hct occur at the late stages of iron deficiency. While neither an Hb or Hct test are direct measures of iron status and do not distinguish among different types of anemia, these tests are useful indicators of iron deficiency anemia.

Iron deficiency is by far the most common cause of anemia in children and women of childbearing age. It may be caused by a diet low in iron, insufficient assimilation of iron from the diet, increased iron requirements due to growth or pregnancy, or blood loss. Anemia can impair energy metabolism, temperature regulation, immune function, and work performance. Anemia during pregnancy may increase the risk of prematurity, poor maternal weight gain, low birth weight, and infant mortality. In infants and children, even mild anemia may delay

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mental and motor development. The risk increases with the duration and severity of anemia, and early damages are unlikely to be reversed through later therapy.

Clarifications/ Guidelines

1. Basis for bloodwork assessment: For pregnant women being assessed for iron deficiency anemia, bloodwork must be evaluated using trimester values established by CDC. Thus, a pregnant women would be certified, based on the trimester in which her bloodwork was taken.

| Category | Hct* | Hgb |
|---|---|---|
| Pregnant First Trimester (0 through 13 wks) Second Trimester (14 through 26 wks) Third Trimester (27 through 40wks) | Less than 33.0% Less than 32.0% Less than 33.0% | Less than 11.0 g/dL Less than 10.5 g/dL Less than 11.0 g/dL |
| Breastfeeding 12 through 14 years 15 years or older | Less than 36.0% Less than 36.0% | Less than 11.8 g/dL Less than 12.0 g/dL |
| Postpartum 12 through 14 years 15 years or older | Less than 36.0% Less than 36.0% | Less than 11.8 g/dL Less than 12.0 g/dL |
| Infant 0 through 5 months 6 to 12 months | No values available to assess anemia. Less than 33.0% | No values available to assess anemia. Less than 11.0 g/dL |
| Children 12 to 24 months 2 to 5 years | Less than 33.0% Less than 33.0% | Less than 11.0 g/dL Less than 11.1 g/dL |

^{*} Rounded Hematocrit values have been adapted from CDC for those WIC agencies that obtain hematocrits only in whole numeric values.

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2. Definition of Trimester: CDC defines a trimester as a term of three months in the prenatal gestation period with the specific trimesters defined as follows in weeks:

First Trimester: 0-13 weeks Second Trimester: 14-26 weeks Third Trimester: 27-40 weeks.

Further, CDC begins the calculation of weeks starting with the first day of the last menstrual period. If that date is not available, CDC estimates that date from the estimated date of confinement (EDC). This definition is used in interpreting CDC's Prenatal Nutrition Surveillance System data, comprised primarily of data on pregnant women participating in the WIC Program.

- 1. Institute of Medicine: Nutrition During Pregnancy; National Academy Press; 1990; pp. 284-285.
- 2. Institute of Medicine: Iron Deficiency Anemia: Recommended Guidelines for the Prevention, Detection, and Management Among US Children and Women of Childbearing Age; 1993.
- 3. Institute of Medicine: WIC Nutrition Risk Criteria: A Scientific Assessment; 1996;154-159.
- 4. Morbidity and Mortality Weekly Report: CDC Criteria for Anemia in Children and Childbearing-Aged Women; April 3, 1998; Vol. 47; No. RR-3.
- 5. Centers for Disease Control and Prevention: Prenatal Nutrition Surveillance System User's Manual. Atlanta, GA: CDC;1994; page 8-3.

References

Developmental, Sensory or Motor Disabilities Interfering with the Ability to Eat

Definition/cut-off value

Developmental, sensory or motor disabilities that restrict the ability to intake, chew or swallow food or require tube feeding to meet nutritional needs. Disabilities include but are not limited to:

- c minimal brain function
- feeding problems due to a developmental disability such as pervasive development disorder (PDD) which includes autism
- c birth injury
- c head trauma
- C brain damage
- c other disabilities

| Participant category and priority level | Category | Priority |
|---|-------------------------|----------|
| | Pregnant Women | I |
| | Breastfeeding Women | I |
| | Non-Breastfeeding Women | III |
| | Infants | I |
| | Children | III |

Justification

Infants and children with developmental disabilities are at increased risk for nutritional problems. Education, referrals, and service coordination with WIC will aid in early intervention of these disabilities. Prenatal, lactating and non-lactating women with developmental, sensory or motor disabilities may: 1) have feeding problems associated with muscle coordination involving chewing or swallowing, thus restricting or limiting the ability to consume food and increasing the potential for malnutrition; or 2) require enteral feedings to supply complete nutritional needs which may potentially increase the risk for specific nutrient deficiencies.

Pervasive Developmental Disorder (PDD) is a category of developmental disorders with autism being the most severe. Young children may initially have a diagnosis of PDD with a more specific diagnosis of autism usually occurring at 2 ½ to 3 years of age or older. Children with PDD have very selective eating habits that go beyond the usual "picky eating" behavior and that may become increasingly selective over time, i.e., foods they used to eat will be refused. This picky behavior can be related to the color, shape, texture or temperature of a

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Justification

food. Common feeding concerns include:

- difficulty with transition to textures, especially during infancy;
- increased sensory sensitivity; restricted intake due to color, texture, and/or temperature of foods;
- decreased selection of foods over time:
- difficulty accepting new foods; difficulty with administration of multivitamin/mineral supplementation and difficulty with changes in mealtime environment.

Education, referrals, and service coordination with WIC will assist the participant, parent or caregiver in making dietary changes/adaptations and finding assistance to assure she or her infant or child is consuming an adequate diet.

References

- 1. Quinn, Heidi Puelzl; "Nutrition Concerns for Children With Pervasive Developmental Disorder/Autism" published in Nutrition Focus by the Center on Human Development and Disability; University of Washington, Seattle, Washington; September/October 1995.
- 2. Paper submitted by Betty Lucas, MPH, RD, CD to the Risk Identification and Selection Collaborative (RISC); November, 1999.
- 3. Zeman, Frances J., Clinical Nutrition and Dietetics, 2^{nd} Edition; 1991; pp. 713-14, 721-722, 729-730.

9/00

No Dependable Source of Iron for Infants at 6 Months of Age or Later

Definition/ cut-off value

No routine age-appropriate iron source after 6 months of age, such as:

- c iron-fortified cereals
- iron-fortified infant formula (at least 10 mg of iron per liter of formula prepared at standard dilution)
- c meats
- c oral iron supplements

Participant category and priority level

| Category | Priority |
|----------|----------|
| Infants | IV |

Justification

The full-term infant is born with iron stores to last for the first 4-6 months. Preterm and low birthweight infants are born with lower iron stores which are often depleted by 2-3 months of age. Rapid growth and increased physical activity significantly increase the need for iron and utilizes iron stores. Body stores are insufficient to meet the increased iron needs making it necessary for the infant to receive a dependable source of iron to prevent iron deficiency anemia. Iron deficiency anemia is associated with cognitive and psychomotor impairments that may be irreversible. Iron deficiency anemia is also associated with decreased immune function, apathy, short attention span, and irritability.

References

- 1. Fomon, S.: Nutrition of Normal Infants; 1993; pp. 246-256.
- 2. Queen and Lang: Handbook of Pediatric Nutrition; 1993; pp. 114-115, 127-128.
- 3. AAP, CON: Pediatric Nutrition Handbook; 1993; pp. 231-235.
- 4. CDC: Recommendations to Prevent and Control Iron Deficiency in the United States; MMWR; April 1998; pp. 18-21.
- 5. WIC Program Regulations: Section 246.10(c)(1)(i).

Inadequate Folic Acid Intake to Prevent Neural Tube Defects (NTD's), Spina Bifida and Anencephaly

Definition/

Consumption of less than 400 mcg of folic acid (synthetic) from fortified foods and/or supplements daily.

| Participant category |
|----------------------|
| and priority level |

| Priority |
|----------|
| IV |
| VI |
| |

Justification

Women of childbearing age who do not consume adequate amounts of folic acid are at greater risk of having a pregnancy affected by the neural tube defects (NTDs), spina bifida and anencephaly. Two randomized studies (Czeizel and Duda, 1992 and MRC Vitamin Study Research Group, 1991) showed that folic acid consumed from fortified foods and/or a vitamin supplement in addition to folate found naturally in food reduces this risk. Each year, approximately 2500 infants are born with spina bifida and anencephaly in the U.S. Studies show that taking 400 mcg of folic acid daily can prevent 50 -70 percent of spina bifida and anencephaly births. In 1992, the Centers for Disease Control recommended that all women capable of becoming pregnant consume 400 mcg of folic acid daily to reduce the risk of having a NTD affected pregnancy. A larger dose, 4000 mcg, is recommended for women who have had a previous pregnancy affected by NTDs. These women are 20 times more likely to have a subsequent affected pregnancy. Because NTDs develop early in pregnancy (between the 17th and 30th day) and many pregnancies are not planned, it is important to have adequate intakes before pregnancy and throughout the childbearing years. NTDs often occur before women know they are pregnant.

While the terms "folic acid" and "folate" are used interchangeably, they have different meanings. It is important to note that folic acid is the synthetic form used in vitamin supplements and fortified foods. Folate occurs naturally and is found in dark green leafy vegetables, strawberries, orange juice, etc. Synthetic folic acid is absorbed better than folate found naturally in food. In 1998, the U.S. government began a folic acid supplementation program to fortify all grain products with folic acid. As a result, the WIC Program provides a variety of cereals that have been fortified with synthetic folic acid. Some contain as much as 100% of the Recommended Daily Allowance. In addition to fortified cereals, nutrition counseling provided in the WIC Program can help improve women's knowledge about folic acid. It is important that breastfeeding and non-breastfeeding women participating in WIC know about folic acid.

Justification (cont'd)

However, many women do not know the benefits of folic acid and are unable to identify good sources of this vitamin. In her study of 251 WIC eligible women, Kloblen conducted interviews to determine folate related knowledge and behaviors. Foods fortified with folic acid were included in the definition of folate. Study findings revealed the following:

- 80 percent did not take a supplement preconceptionally
- 26 percent could correctly define folate
- 30 percent could list food sources of folate

Although some studies report increased blood folate levels in the population as a result of regulations outlining the requirements for routine fortification of grain products, there is no evidence at this time indicating that fortification has eradicated the need for the 1992 public health recommendation.

Clarifications

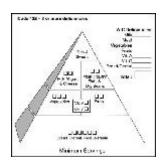
The category of "pregnant women" is not included in this criterion. The beneficial effect of folic acid with regards to NTDs occurs prior to conception and in the first 30 days of pregnancy. Since it is unlikely that a woman would be certified for WIC during the earliest weeks of her pregnancy, the inadequacy of folic acid intake is most appropriately a pre/interconceptional risk factor. For this reason, only the postpartum categories are included in this criterion.

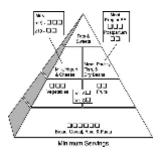
References

- 1. Morbidity and Mortality Weekly Report: Recommendations for the Use of Folic Acid to Reduce the Number of Cases of Spina Bifida and other neural Tube Defects; September 11, 1992; Vol 41; No. RR-14.
- 2. Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin and Choline; 1999; Institute of Medicine: National Academy Press; p. 131-198.
- 3. Kloeblen, Amy S: Folate knowledge, intake from fortified grain products, and periconceptional supplementation patterns of a sample of low-income pregnant women according to the Health Belief Model; JADA; January 1999; p. 33-38.
- 4. Centers for Disease Control and Prevention: Preventing Neural Tube Birth Defects: A Prevention Model and Resource Guide; 1998
- 5. Suitor, C.W. and Bailey, L.B: Dietary Folate Equivalents: Interpretation and Application; JAmDietAssoc; 2000:100; p. 88-94.
- 6. Oakley, Godfrey, Adams, Myron and Dickinson, Charlotte: More Folic Acid for Everyone, Now; American Institute of Nutrition 1996; p.751S-755S.

Changes to the Scoring Protocol for Fruits and Vegetables

1. Changes to Food Guide Pyramid





Fruit and vegetable box has been **split into two separate food groups**:

Vegetable group: there are 3 boxes within the vegetable group, which

reflects the recommendation for at least 3 servings of

vegetables daily

Fruit group: there are 2 boxes within fruit group, which reflects the

recommendation for at least 2 servings of fruits daily

Vitamin A & C box overlaps the fruit and vegetable boxes

WIC Deficiencies

Separate line for vegetables Separate line for fruits

2. Scoring Changes

- Score fruits and vegetables just like all the other foods groups. There are no longer any exceptions when scoring fruits and vegetables.
- Score fruits and vegetables separately and mark the appropriate boxes on the Food Guide Pyramid.
- Partial servings of fruits and vegetables are added together to make complete servings - this includes all forms - raw, cooked and juices.

Vitamin A and C

- Score vitamin A and C sources from both fruits and vegetables and add together. Mark the appropriate boxes on the Food Guide Pyramid.
- Partial servings of good sources of vitamin A and C are added together to make complete servings. For example, half-servings of vitamin A fruits can be added with half-servings of vitamin A vegetables to equal one full-serving of a

good source of vitamin A. This is also true for good sources of vitamin C, as well as for foods that are good sources of both vitamins A and C.

3. Assigning WIC Deficiencies

Vegetables

- Assign three deficiencies if the applicant did not consume at least one full vegetable serving.
- Assign one deficiency if the applicant consumed one or two full servings, but not the recommended three servings.

Fruits

- Assign three deficiencies if the applicant did not consume at least one full fruit serving.
- Assign one deficiency if the applicant consumed one or two full servings, but not the recommended three servings.

Vitamin A and C

- Assign only one deficiency for vitamin A if the applicant did not consume at least one full serving from a fruit and/or vegetable, which is a good source of vitamin A.
- Assign only one deficiency for vitamin C if the applicant did not consume at least one full serving from a fruit and/or vegetable, which is a good source of vitamin C.

Revisions to the WIC Participant and Diet Health History Forms (November 2000)*

| WIC Participant Forms (WIC-36, 38, 39, 40 and 41) | | |
|--|------------------------------|---|
| Nutrition Risk Condition | Forms | Revision |
| 201 Anemia | All forms | The risk condition has been renamed Low Hematocrit/Low Hemoglobin |
| | Child | A box has been added which contains information on the new requirements for blood work and the criteria for waiving the blood test |
| 362 Developmental Delays, Sensory or Motor Delays Interfering with the Ability to Eat | All forms Infant Child | The risk condition has been renamed Developmental , Sensory or Motor Disabilities Interfering with the Ability to Eat Revised to include feeding problems due to pervasive developmental disorder (PDD) |
| 424 Inadequate Vitamin Mineral Supplementation | Breastfeed. Postpartum | The risk condition 424 has been removed from these two participant forms. The new risk condition, 426 - Inadequate Folic Acid Intake has been added in its place. |
| "Includes, but not limited to:" | All forms | The term "Includes, but not limited to:" has been removed from the definition of the nutrition-related and dietary risks. Now all conditions that are included within each risk are listed in their definition, except for risks 341 - Nutrient Deficiency Diseases and 351 - Inborn Errors of Metabolism. Since these two risks contain a lengthy list of conditions, "refer to nutrition risk manual for other conditions" was added to their definition. |

| WIC Diet/Health History Forms (WIC-42, 44 and 45) | | |
|--|---------------------|--|
| Nutrition Risk Condition | Forms | Revision |
| Food Guide Pyramid | Women Children | Revision to the Fruit and Vegetables group |
| 362 Developmental Sensory or Motor Delays (Diet History) | Infant | Under Risk Condition Defined, the title has been changed to Developmental, Sensory or Motor Disabilities |
| 371 Do you smoke or use tobacco products (Health History) | Women | Pregnant and Breastfeeding only was added to the shaded comment section |
| 381 Does your child have trouble eating because of dental problems? (Health History) | Children | The form was revised to ask more specific questions. Does your child have any dental problem? White spots, pain in mouth, difficulty chewing or tooth decay or cavities. |
| 412 Le ha ofrecido otros tipos de alimentos o comidas | Infant (Spanish) | The word "comidas" (foods) has been replaced with "bebidas" (beverages). |
| Addition to the 400 series questions: | Women | Iron - Pregnant only was added to the shaded comment section |
| 424 Vitamins/minerals (Health History) | | 426 Do you take folic Acid was added as a new question Folic Acid - Breastfeeding and Postpartum only was added to the shaded comment section |

^{*} The revised Pregnant Participant Form (WIC-39), Infant Participant Form (WIC-36), and the Infant Diet/Health History Form (WIC 42) will not be distributed to the local agencies for implementation on 11/1. These forms will be printed at a later date and stocked in the TDH warehouse once the supply of the 1999 version is depleted.